



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2, 25, and 30

[GN Docket No. 14-177, IB Docket Nos. 15-256 and 97-95, WT Docket No. 10-112; FCC 17-152]

Use of Spectrum Bands above 24 GHz for Mobile Radio Services

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Federal Communications Commission (Commission or FCC) seeks comment on proposed service rules to allow flexible fixed and mobile uses in additional bands and on refinements to the adopted rules in this document. A Final Rule document for the Second Report and Order related to this document for the Second Further Notice of Proposed Rulemaking is published in this issue of this Federal Register.

DATES: Comments are due on or before January 23, 2018; reply comments are due on or before February 22, 2018.

ADDRESSES: You may submit comments, identified by GN Docket No. 14-177, by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Federal Communications Commission's Web site: <https://www.fcc.gov/ecfs/>. Follow the instructions for submitting comments.

- People with Disabilities: Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by email: FCC504@fcc.gov, phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: John Schauble of the Wireless Telecommunications Bureau, Broadband Division, at (202) 418-0797 or John.Schauble@fcc.gov, Michael Ha of the Office of Engineering and Technology, Policy and Rules Division, at 202-418-2099 or Michael.Ha@fcc.gov, or Jose Albuquerque of the International Bureau, Satellite Division, at 202-418-2288 or Jose.Albuquerque@fcc.gov. For information regarding the PRA information collection requirements contained in this PRA, contact Cathy Williams, Office of Managing Director, at (202) 418-2918 or Cathy.Williams@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Second Further Notice of Proposed Rulemaking (Second FNPRM), GN Docket No. 14-177, FCC 17-152, adopted on November 16, 2017 and released on November 22, 2017. The complete text of this document is available for public inspection and copying from 8 a.m. to 4:30 p.m. Eastern Time (ET) Monday through Thursday or from 8 a.m. to 11:30 a.m. ET on Fridays in the FCC Reference Information Center, 445 12th Street S.W., Room CY-A257, Washington, DC 20554. The complete text is available on the Commission's Web site at <http://wireless.fcc.gov>, or by using the search function on the ECFS Web page at <http://www.fcc.gov/cgb/ecfs/>. Alternative formats are available to persons with disabilities by sending an e-mail to fcc504@fcc.gov or by calling the Consumer & Governmental Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (tty).

Comment Filing Procedures

Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). See Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.

- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Dr., Annapolis Junction, Annapolis MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 888-835-5322 (tty).

Ex Parte Rules—Permit-But-Disclose

Pursuant to § 1.1200(a) of the Commission's rules, this Second FNPRM shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's ex parte rules. Persons making ex parte presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral ex parte presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during ex parte meetings are deemed to be written ex parte presentations and must be filed consistent with § 1.1206(b). In proceedings governed by § 1.49(f) or for which the Commission has made available a method of electronic filing, written ex parte presentations and memoranda summarizing oral ex parte presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's ex parte rules.

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, as amended (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking (NPRM) released in October

2015 in this proceeding. A Final Regulatory Flexibility Analysis (FRFA) was incorporated in the Report and Order and Further Notice of Proposed Rulemaking (R&O/FNPRM) released in July 2016 in this proceeding. The Commission sought written public comment on the proposals in NPRM, including comments on the IRFA. No comments were filed addressing the IRFA. This present Supplemental Final Regulatory Flexibility Analysis (Supplemental FRFA) supplements the FRFA in the R&O/FNPRM and conforms to the RFA.

Paperwork Reduction Act

The Second FNPRM contains proposed information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. OMB, the general public, and other Federal agencies are invited to comment on the proposed information collection requirements contained in this proceeding. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees

Synopsis

A. FSS Use of 24.75-25.25 GHz Band

1. The Commission proposes to license FSS earth stations in this band on a co-primary basis under the provisions in § 25.136(d), as revised in the Second R&O for the 47.2-48.2 GHz band by adding the 24.75-25.25 GHz band to this rule. This means that the 24.75-25.25 GHz band would only be available for individually-licensed FSS earth stations that meet specific requirements applicable to earth stations in other bands shared with UMFUS (e.g., limitations on population covered, number of earth station locations in a PEA, and a prohibition on earth stations in places where they would preclude terrestrial service to people or equipment that are in transit or are present at mass gatherings). As a consequence of this change, the Commission proposes conforming modifications to various earth

station application requirements specified in §§ 25.115(e) and 25.130(b), and deleting as obsolete the licensing requirements for the 25.05-25.25 GHz band specified in § 25.203(l). The Commission is also seeking comment on adding a U.S. Table of Allocations footnote specifying the relative interference protection obligations of FSS and UMFUS stations in the 24.75-25.25 GHz band. The Commission is also proposing to add a U.S. Table of Allocations footnote specifying the relative interference protection obligations of FSS and UMFUS stations in the 24.75-25.25 GHz band. It appears that allowing broader FSS use in the 24.75-25.25 GHz band may be appropriate, and to provide for more flexible FSS use of the band, the Commission proposes to eliminate footnote NG535. This would make the 24.75-25.25 GHz band available for general FSS uplink operations, without restricting these operations to, or affording priority for, the provision of feeder links for the 17/24 GHz BSS space stations. Given the very light use of the 24.75-25.25 GHz band for BSS feeder links, the earth station two-degree spacing rules that would protect BSS feeder links from other FSS earth stations in the band, and the power limits placed on BSS feeder link earth stations, it does not appear necessary to give BSS feeder link earth station transmissions priority over other uses of the FSS for earth stations located within the United States, or to preclude other FSS stations from claiming protection from feeder link earth station transmissions located within the United States. To accommodate more diverse FSS operations in the band and to further increase flexibility for all FSS uses in this new sharing regime, the Commission also proposes to eliminate the Appendix F orbital-location restrictions for 17/24 GHz BSS space stations specified in § 25.262(a). The Commission seeks comment on these proposals.

2. Though the Commission is proposing to allow broader and more flexible FSS use of the 24.75-25.25 GHz band consistent with the predominant use of the band for terrestrial wireless services, the Commission recognizes that aggregate interference to the satellite receivers from UMFUS operations may be a concern in this band, similar to concerns raised in the context of the 28 GHz and 47 GHz bands. There are currently earth stations and space stations that operate in this band. Should the Commission take any action to address the potential of aggregate interference to impact satellite

receivers in this band? How likely is it that such interference will occur? Should the Commission treat such interference to existing satellites, should it occur, differently from satellites deployed in the future? Should the Commission adopt a U.S. Table of Allocations footnote specifying the relative interference protection obligations of FSS and UMFUS stations in the 24.75-25.25 GHz band and what should be the content of such a footnote?

3. Consistent with these proposals, in addition to modifications to § 25.136, the Commission proposes several rule changes to part 25. To harmonize the treatment of BSS feeder links and other FSS transmissions, the Commission proposes first to modify § 25.138 to extend applicability of the Ka-band off-axis EIRP density limits in paragraph (a) to the 24.75-25.25 GHz band. Then the Commission will eliminate the nearly identical BSS feeder link-specific earth station off-axis EIRP density limits for the 24.75-25.25 GHz band in § 25.223(b). The Commission proposes to eliminate the coordination provisions §§ 25.223(c) and (d), and to add the 24.75-25.25 GHz band to the list of frequency bands in its general FSS earth station coordination rules in § 25.220(a). These changes would allow us to remove and reserve § 25.223, because there would be no need for these provisions, which currently provide alternative means of licensing BSS feeder links. As a consequence, the Commission will also eliminate cross references to the rule contained in § 25.209(f). In § 25.204, the Commission proposes to eliminate paragraph (e)(4), which contains rain fade specifications specific to 17/24 GHz BSS feeder link transmissions, and instead to include the 24.75-25.25 GHz band in paragraph (e)(3), which contains nearly identical Ka-band FSS rain fade specifications. The Commission also proposes to modify the interference-showing requirements for FSS applicants in § 25.140(a)(3) to make clear its applicability to FSS (Earth-to-space) transmissions to 17/24 GHz BSS space stations. In addition, the Commission proposes to add a new subparagraph (iv) requiring applicants for space stations receiving uplinks in the 24.75-25.25 GHz band to certify, among other things, that the earth stations transmitting to such space stations will not exceed the off-axis EIRP density limits in § 25.138(a). As a result, the Commission also proposes consequential modifications to the definitions of “routine processing or licensing” and “two-

degree compliant space station” contained in § 25.103. The Commission seeks comment on these proposals.

4. In addition, the Commission proposes to eliminate the operational requirements associated with the Appendix F orbital-location constraints in § 25.262 by deleting paragraphs (a) and (d), and modifying paragraphs (b) and (e). The Commission further proposes to modify §§ 25.140(b), (c) and (d) to reflect changes in the interference showing required by 17/24 GHz BSS applicants, which is currently defined in part by the applicant’s orbital position relative to Appendix F locations, and to eliminate an operational requirement made moot by deleting § 25.262(b). Similarly, the Commission proposes to delete Appendix F specific requirements contained in § 25.114(d)(17), and to eliminate a reference in § 25.114(d)(7) to a deleted subparagraph in § 25.140(b). Finally, to provide for consistent treatment of 17/24 GHz feeder uplinks with other FSS transmissions in the 24.75-25.25 GHz band, the Commission proposes to modify the cross-polarization isolation requirement in § 25.210(i) to make clear that it applies only to 17/24 GHz BSS space-to-Earth transmissions.

B. Performance Requirements – Geographic Area Metric

5. In the FNPRM, the Commission sought comment on adopting a performance metric tailored to Internet of Things-type deployments or other innovative services that may not be a good fit for traditional metrics. Because the record on this issue was not sufficiently detailed, we decline to adopt any additional metric today and seek comment on additional proposals discussed below.

6. The Commission recognizes the difficulty of crafting an IoT-specific metric, especially while the relevant technologies and use cases are still being developed. The Commission instead seeks additional comment on whether to adopt a more traditional or other metric that may nevertheless accommodate these types of services. For example, a performance metric based on geographic area coverage (or presence) could allow for networks that provide meaningful service but deploy along lines other than residential population. Such a metric could be easier to implement than any of the novel

metrics proposed in the record, which could reduce uncertainty among licensees wishing to deploy innovative services and thereby encourage such deployment.

7. The Commission seeks comment on the following metric as an option for UMFUS licensees to fulfill their buildout requirements: geographic area coverage of 25% of the license area. The Commission also seeks comment on an alternative requirement of presence in 25% of subset units of the license area, such as census tracts, counties, or some other area. The latter standard could accommodate deployments, such as sensor networks, that are not designed to provide mobile or point-to-multipoint area coverage, and for whom calculating “coverage of 25% of the area” would therefore not be a meaningful standard. Equipment or deployments relied on to demonstrate compliance with this metric would be required, as with the Commission’s previously-adopted metrics, to be part of a network that is actually providing service, either to external customers or for internal uses.

8. Specifically, the Commission seeks input on whether 25% would be the appropriate level of coverage for a geographic area metric in the mmW bands. The Commission suggests this level as an attempt to maintain parity between the requirements of this metric and the requirements of our previously-established metric based on population coverage. The physical characteristics of the mmW bands, particularly shorter propagation distances and the consequent smaller coverage area, are also important considerations. The Commission seeks comment on this coverage level, including any suggestions of alternative levels of coverage that might be more appropriate.

9. The Commission also seeks comment more generally on whether geographic area coverage is the most appropriate metric for accommodating innovative services in the mmW bands, or whether some other metric might be more appropriate. The Commission welcomes any alternative suggestions for metrics that might better accommodate innovative services, without raising artificial regulatory barriers to particular use cases. For example, have there been any technological or industry developments that would better enable us to craft a meaningful usage-based metric? Are there additional options that have not yet been mentioned in the record? The Commission particularly seeks

comment from entities who believe that its mobile and fixed metrics would not be adequate to measure deployment of services they might seek to provide in UMFUS bands. The Commission asks that these commenters identify additional types of performance metrics that may be better suited to measuring deployment of services that they might seek to provide in UMFUS bands.

10. The Commission emphasize that any metric the Commission adopts to accommodate IoT services would, like the existing population coverage and fixed link metrics, be available to any UMFUS licensee. While the Commission suggests an additional metric in order to facilitate the deployment of IoT and other innovative services, there would be no requirement that a licensee build a particular type of network or provide a particular type of service in order to use whatever metric the Commission ultimately adopts.

11. The Commission strongly encourages stakeholders to fully develop a record on this issue. Under the Commission's current part 30 rules, licensees have limited options for fulfilling buildout requirements: fixed links, population-based area coverage, or some combination thereof. Part 30 does not use a "substantial service" framework; if a licensee does not meet the requirements specifically set out in the rules, it cannot demonstrate buildout in some other way. If the Commission does not adopt any other metrics, services with non-traditional network structures may be effectively barred from mmW bands by inappropriate and inapplicable buildout requirements. This is especially important given the changes to the definition of "fixed link" that the Commission adopts. Without an additional metric, any low-power deployments that do not use mobile or point-to-multipoint network architecture will not be able to qualify for license renewal.

C. Mobile Spectrum Holdings

12. For many of the reasons that the Commission declined to adopt a pre-auction limit for the 24 GHz and 47 GHz bands in the Second R&O, the Commission proposes to eliminate the pre-auction limit of 1250 megahertz that the R&O had adopted for the 28 GHz, 37 GHz and 39 GHz bands. Given the

nascent stage of technological development in these mmW bands and the fact that the Co are continuing to make additional mmW spectrum available through this proceeding, retaining a pre-auction limit for the 28 GHz, 37 GHz, and 39 GHz bands may be unnecessary. Moreover, given the technical similarity between all five bands and the Commission's decision in the Second R&O to group these five bands for purposes of secondary market transactions review, the Commission finds that it would be inconsistent to retain the pre-auction limit for the 28 GHz, 37 GHz, and 39 GHz bands. The Commission seeks comment on this proposal. To the extent that commenters advocate the retention of this pre-auction limit, commenters should discuss how the limit should be implemented and the likely effects of having two different policy frameworks applicable to mmW spectrum acquired at auction.

13. The Commission also seeks comment on whether, in the absence of pre-auction limits for mmW spectrum, there is a need to apply a case-by-case review of mmW spectrum holdings to post-auction applications for initial mmW licenses. Prior to the articulation of a different policy in the Mobile Spectrum Holdings Order adopted in 2014, the Commission applied a case-by-case review to the initial licensing of spectrum post-auction, and similarly allowed for divestiture of licenses to address potential competitive harms identified in that review. Is it necessary and appropriate to apply such a review to the initial licensing of mmW spectrum post-auction? To the extent that commenters support a post-auction case-by-case review of spectrum acquired at auction, commenters should discuss how the review should be implemented, including what the Commission should consider when undertaking such a review, how an entity's mmW spectrum holdings should be calculated, and potential remedies to ameliorate any potential competitive concerns identified in the review.

D. Operability in 24 GHz

14. The Commission historically has sought to promote greater operability of equipment, allowing smaller providers to benefit from the scale generated by equipment capable of operating across an entire band or adjacent bands. In the R&O, the Commission adopted an operability

requirement for the 28 GHz band, and for the 37 and 39 GHz bands. This requirement specifies that any mobile or transportable equipment capable of operating in any portion of the 28 GHz band must be capable of operating across the entire 28 GHz band (from 27.5 to 28.35 GHz), and similarly that any such equipment capable of operating in the 37 GHz or 39 GHz bands must be capable of operating across the entirety of both of those bands (from 37 GHz to 40 GHz).

15. The Commission today adopts rules adding the 24 GHz band (24.25-24.45 GHz and 24.75-25.25 GHz) to UMFUS. Given the segmented nature of the band, the Commission wants to ensure that all portions of the band are available for development and deployment of services as a practical matter, and in particular that the lower segment of the band does not suffer from a lack of available equipment. The operability rule the Commission adopted in the R&O is specific to the 28 GHz band and the 37/39 GHz bands, and does not currently apply to UMFUS generally, or to the 24 GHz band. The Commission therefore proposes to add an operability requirement for the 24 GHz band. Specifically, the Commission proposes to require that any equipment capable of operating anywhere within the 24 GHz band must be capable of operating across the entire 24 GHz band, on all frequencies in both band segments. The Commission seeks comment on this proposal.

E. Other Millimeter Wave (mmW) Bands

16. The Commission reiterates that the mmW bands that were in the prior NPRM/FNPRM or raised in the record, but which the Commission has not yet made available for flexible terrestrial wireless use, are still under consideration by the Commission. The proceeding on these bands is ongoing and they will be considered in future Commission items, and the Commission invites comment on any new studies or quantitative data that the Commission should consider. The Commission notes that does not preclude the Commission from moving forward to adopt new provisions where the Commission has reached agreement with the Executive Branch on sharing or interference protections and have a developed record. To the extent that there are additional mmW bands that the Commission

should consider for flexible terrestrial wireless use, which have not been raised in the proceeding thus far, the Commission invites interested parties to file comments on these frequencies.

F. Initial Regulatory Flexibility Analysis

17. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in the attached Further Notice of Proposed Rulemaking (FNPRM). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines specified in the FNPRM for comments. The Commission will send a copy of this FNPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA). In addition, the FNPRM and IRFA (or summaries thereof) will be published in the Federal Register.

1. Need for, and Objectives of, the Proposed Rules

18. In the Second Further Notice of Proposed Rulemaking, the Commission proposes to authorize FSS use of the 24.75-25.25 GHz band for individually licensed earth stations. The Commission also proposes to create a buildout standard for Upper Microwave Flexible Use Service (UMFUS) licensees based on geographic area coverage that would be an alternative to the current population coverage standard in the current rules. The Commission also seeks comment on establishing an operability requirement throughout the 24 GHz band. Finally, the Commission seeks comment on what other mmW bands may be appropriate for UMFUS use.

19. Under the current rules, BSS feeder links have priority over other FSS uses in the 24.75-25.25 GHz band. Given the very light use of the 24.75-25.25 GHz band for BSS feeder links, the existence of the Commission's earth station two-degree spacing rules that can protect BSS feeder links from other FSS earth stations in the band, and the power limits placed on BSS feeder link earth stations, it appears there is no need to give BSS feeder link earth stations priority over other uses of the FSS for earth

stations located within the United States, or to preclude other FSS earth stations from claiming protection from feeder link earth stations located within the United States.

20. A performance metric based on geographic area coverage (or presence) would allow for networks that provide meaningful service but deploy along other lines than residential population. Such a metric could be useful for sensor-based networks, particularly for uses in rural areas. The Commission proposes to adopt the following metric as an option for UMFUS licensees to fulfill their buildout requirements: geographic area coverage of 25% of the license area. The Commission also seeks comment on an alternative requirement of presence in 25% of subset units of the license area, such as census tracts, counties, or some other area. The latter standard could accommodate deployments, such as sensor networks, that are not designed to provide mobile or point-to-multipoint area coverage, and for whom calculating “coverage of 25% of the area” would therefore not be a meaningful standard.

21. The FNPRM proposes an operability requirement such that any device designed to operate within the 24 GHz bands must be capable of operating on all frequencies within those bands. This operability requirement will ensure that devices developed for the 24 GHz band operate throughout the band, making it easier for smaller businesses with fewer resources to find equipment that can operate across the entire band.

22. Finally, to the extent that there are additional mmW bands that the Commission should consider for flexible terrestrial wireless use, which have not been raised in the proceeding thus far, the Commission invites interested parties to file comments on these frequencies. To the extent additional spectrum can be made available for UMFUS use, that additional spectrum will make it easier for small businesses to obtain the spectrum they need to provide service.

2. Legal Basis

23. The proposed action is authorized pursuant to sections 1, 2, 3, 4, 5, 7, 301, 302, 302a, 303, 304, 307, 309, and 310 of the Communications Act of 1934, 47 U.S.C. 151, 152, 153, 154, 155, 157,

301, 302, 302a, 303, 304, 307, 309, and 310, section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302.

**3. Description and Estimate of the Number of Small Entities to Which the
Proposed Rules Will Apply**

24. Wireless Telecommunications Carriers (except Satellite). This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular services, paging services, wireless internet access, and wireless video services. The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year. Of this total, 955 firms had employment of 999 or fewer employees and 12 had employment of 1,000 employees or more. Thus, under this category and the associated size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities.

25. Fixed Microwave Services. Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. They also include the Upper Microwave Flexible Use Service and the mmW Service where licensees can choose between common carrier and non-common carrier status. At present, there are approximately 66,680 common carrier fixed licensees, 69,360 private and public safety operational-fixed licensees, 20,150 broadcast auxiliary radio licensees, 411 LMDS licenses, 33 24 GHz DEMS licenses, 777 39 GHz licenses, and five 24 GHz licensees, and 467 mmW licenses in the microwave services. The Commission has not yet defined a small business with respect to microwave services. The closest applicable SBA category is Wireless Telecommunications Carriers (except Satellite) and the appropriate size standard for this category under SBA rules is that such a business is small if it has 1,500 or fewer employees. For this industry, U.S. Census Bureau data for 2012 shows that there were 967 firms that operated for the entire year. Of this total, 955 had

employment of 999 or fewer, and 12 firms had employment of 1,000 employees or more. Thus, under this SBA category and the associated standard, the Commission estimates that the majority of fixed microwave service licensees can be considered small.

26. The Commission does not have data specifying the number of these licensees that have more than 1,500 employees, and thus is unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small business concerns under the SBA's small business size standard. Consequently, the Commission estimates that there are up to 36,708 common carrier fixed licensees and up to 59,291 private operational -fixed licensees and broadcast auxiliary radio licensees in the microwave services that may be small and may be affected by the rules and policies adopted herein. The Commission notes, however, that both the common carrier microwave fixed and the private operational microwave fixed licensee categories includes some large entities.

27. Satellite Telecommunications and All Other Telecommunications. This category comprises firms "primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications." The category has a small business size standard of \$32.5 million or less in average annual receipts, under SBA rules. For this category, U.S. Census Bureau data for 2012 shows that there were a total of 333 firms that operated for the entire year. Of this total, 299 firms had annual receipts of less than \$25 million. Consequently, the Commission estimates that the majority of satellite telecommunications providers are small entities.

28. All Other Telecommunications. The "All Other Telecommunications" category is comprised of establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting

telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.” The SBA has developed a small business size standard for “All Other Telecommunications,” which consists of all such firms with gross annual receipts of \$32.5 million or less. For this category, U.S. Census Bureau data for 2012 shows that there were a total of 1442 firms that operated for the entire year. Of these firms, a total of 1400 firms had gross annual receipts of under \$25 million and 42 firms had gross annual receipts of \$25 million to \$49, 999,999. Thus, the Commission estimates that a majority of “All Other Telecommunications” firms potentially affected by its actions can be considered small.

29. Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.

This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.” The SBA has established a size standard for this industry of 1,250 employees or less. U.S. Census Bureau data for 2012 shows that 841 establishments operated in this industry in that year. Of that number, 828 establishments operated with fewer than 1,000 employees, 7 establishments operated with between 1,000 and 2,499 employees and 6 establishments operated with 2,500 or more employees. Based on this data, the Commission concludes that a majority of manufacturers in this industry is small.

4. Description of Projected Reporting, Recordkeeping, and other Compliance Requirements

30. The projected reporting, recordkeeping, and other compliance requirements proposed in the Second FNPRM will apply to all entities in the same manner. The revisions the Commission adopts

should benefit small entities by giving them more information, more flexibility, and more options for gaining access to wireless spectrum.

31. Small entities and other applicants in the Upper Microwave Flexible Use Service will be required to meet buildout requirements at the end of their initial license terms. In doing so, they will be required to provide information to the Commission on the facilities they have constructed, the nature of the service they are providing, and the extent to which they are providing coverage in their license area.

32. Because the Commission has already adopted performance requirements for UMFUS licensees, the proposal in the Second FNPRM will not change the recordkeeping and compliance requirements for small entities and other UMFUS licensees. The Second FNPRM proposes to give small entities and other UMFUS licensees another means of meeting those requirements. The Commission expects that the filing, recordkeeping and reporting requirements associated with the demands described above, will require small entities as well as other entities that intend to utilize these new UMFUS licenses, to use professional, accounting, engineering or survey services to meet these requirements. As noted below, the Commission seeks comment on any steps that could be taken to minimize any significant economic impact on small businesses.

5. Steps taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

33. The RFA requires an agency to describe any significant alternatives for small businesses that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities. Accordingly, the Commission seeks comment on whether any of burdens associated the filing, recordkeeping and reporting requirements described

above can be minimized for small businesses. In particular, the Commission seeks comment on whether any of the costs associated with its construction or performance requirements in these bands can be alleviated for small businesses.

34. As noted above, the buildout requirements and information reported to the Commission will be the same for small and large businesses in the Upper Microwave Flexible Use Service. To the extent applying the rules equally to all entities results in the cost of complying with these burdens being relatively greater for smaller businesses than for large ones, these costs are necessary to effectuate the purpose of the Communications Act, namely to ensure that spectrum is being put into use. Moreover, while small and large businesses must equally comply with these rules and requirements, the proposed rule changes would grant additional flexibility to all licensees, including small businesses. Specifically, opening 24.75-25.25 GHz for general FSS use will provide small satellite entities with access to additional spectrum which they can use in connection with individually licensed earth stations. Creating a geographic area buildout metric for UMFUS licensees will give those licensees, including small businesses, an option for providing service that does not cover a large population.

35. To assist the Commission's evaluation of the economic impact on small entities, as a result of actions that have been proposed in the Second FNPRM, and to better explore options and alternatives, the Commission has sought comment from the parties. The Commission seeks comment on whether any of the burdens associated the filing, recordkeeping and reporting requirements described above can be minimized for small businesses. In addition, the Second FNPRM seeks comment on whether any of the costs associated with its construction or performance requirements in these bands can be alleviated for small businesses. The Commission expects to more fully consider the economic impact and alternatives for small entities following the review of comments filed in response to the Second FNPRM.

6. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

36. None.

List of Subjects in 47 CFR Parts 2, 25, 30

Communications common carriers, Reporting and recordkeeping requirements, Communications equipment.

FEDERAL COMMUNICATIONS COMMISSION.

Marlene H. Dortch,

Secretary.

Office of the Secretary.

Proposed Rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR parts 2, 25, and 30 as follows:

PART 2 – FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. In § 2.106, the Table of Frequency Allocations is amended as follows:

- a. Page 54 is revised.

- b. In the list of non-Federal Government (NG) Footnotes, footnote NG535 is removed.

The revisions read as follows:

§ 2.106 Table of Frequency Allocations.

* * * * *

24-24.05			24-24.05	24-24.05	ISM Equipment (18) Amateur Radio (97)
AMATEUR				AMATEUR	
AMATEUR-SATELLITE				AMATEUR-SATELLITE	
5.150			5.150 US211	5.150 US211	
24.05-24.25			24.05-24.25	24.05-24.25	RF Devices (15) ISM Equipment (18) Private Land Mobile (90) Amateur Radio (97)
RADIOLOCATION			RADIOLOCATION G59	Amateur	
Amateur			Earth exploration-satellite (active)	Earth exploration-satellite (active)	
Earth exploration-satellite (active)				Radiolocation	
5.150			5.150	5.150	
24.25-24.45	24.25-24.45	24.25-24.45	24.25-24.45	24.25-24.45	RF Devices (15) Upper Microwave Flexible Use (30)
FIXED	RADIONAVIGATION	FIXED MOBILE RADIONAVIGATION		FIXED MOBILE	
24.45-24.65	24.45-24.65	24.45-24.65	24.45-24.65		RF Devices (15) Satellite Communications (25)
FIXED	INTER-SATELLITE	FIXED	INTER-SATELLITE		
INTER-SATELLITE	RADIONAVIGATION	INTER-SATELLITE MOBILE RADIONAVIGATION	RADIONAVIGATION		
	5.533	5.533	5.533		
24.65-24.75	24.65-24.75	24.65-24.75	24.65-24.75		

FIXED	INTER-SATELLITE	FIXED	INTER-SATELLITE		
FIXED-SATELLITE	RADIOLOCATION-SATELLITE	FIXED-SATELLITE	RADIOLOCATION-SATELLITE (Earth-to-space)		
(Earth-to-space) 5.532B	(Earth-to-space)	(Earth-to-space) 5.532B			
INTER-SATELLITE		INTER-SATELLITE			
		MOBILE			
		5.533			
24.75-25.25	24.75-25.25	24.75-25.25	24.75-25.25	24.75-25.25	RF Devices (15)
FIXED	FIXED-SATELLITE	FIXED		FIXED	Satellite Communications (25)
FIXED-SATELLITE	(Earth-to-space) 5.535	FIXED-SATELLITE		FIXED-SATELLITE	Upper Microwave Flexible
(Earth-to-space) 5.532B		(Earth-to-space) 5.535		(Earth-to-space)	Use (30)
		MOBILE		MOBILE	
25.25-25.5			25.25-25.5	25.25-25.5	RF Devices (15)
FIXED			FIXED	Inter-satellite 5.536	
INTER-SATELLITE 5.536			INTER-SATELLITE 5.536	Standard frequency and time	
MOBILE			MOBILE	signal-satellite (Earth-to-space)	
Standard frequency and time signal-satellite (Earth-to-space)			Standard frequency and time		
			signal-satellite (Earth-to-space)		
25.5-27			25.5-27	25.5-27	
EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536B			EARTH EXPLORATION-	SPACE RESEARCH	
FIXED			SATELLITE (space-to-Earth)	(space-to-Earth)	
INTER-SATELLITE 5.536			FIXED	Inter-satellite 5.536	
MOBILE			INTER-SATELLITE 5.536	Standard frequency and time	

SPACE RESEARCH (space-to-Earth) 5.536C	MOBILE	signal-satellite (Earth-to-space)	
Standard frequency and time signal-satellite (Earth-to-space)	SPACE RESEARCH (space-to-Earth) Standard frequency and time signal-satellite (Earth-to-space)		
5.536A	5.536A US258	5.536A US258	Page 54

* * * * *

PART 25 – SATELLITE COMMUNICATIONS

3. The authority citation for part 25 is revised to read as follows:

Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, 310, 319, 332, 605, and 721, unless otherwise noted.

4. Amend § 25.103 by revising the definitions of “Routine processing or licensing” and “Two-degree-compliant space station” to read as follows:

§ 25.103 Definitions.

* * * * *

Routine processing or licensing. Expedited processing of unopposed applications for earth stations in the FSS communicating with GSO space stations, except for earth stations licensed pursuant to § 25.136, that satisfy the criteria in §§ 25.138(a), 25.211(d), 25.212(c), 25.212(d), 25.212(e), 25.212(f), and 25.218, include all required information, are consistent with all Commission rules, and do not raise any policy issues. Some, but not all, routine earth station applications are eligible for an autogrant procedure under § 25.115(a)(3).

* * * * *

Two-degree-compliant space station. A GSO FSS space station operating in the conventional or extended C-bands, the conventional or extended Ku-bands, the 24.75-25.25 GHz band, or the conventional Ka-band within the limits on downlink EIRP density or PFD specified in §25.140(a)(3) and communicating only with earth stations operating in conformance with routine uplink parameters specified in §§ 25.138(a), 25.211(d), 25.212(c), (d), or (f), §§ 25.218, 25.221(a)(1) or (a)(3), and § 25.222(a)(1) or (a)(3), § 25.226(a)(1) or (a)(3), or § 25.227(a)(1) or (a)(3).

* * * * *

5. Amend § 25.114 by revising paragraph (d)(7) and removing and reserving paragraph (d)(17) as follows:

§ 25.114 Applications for space station authorizations.

* * * * *

(d) * * *

(7) Applicants for authorizations for space stations in the Fixed-Satellite Service must also include the information specified in § 25.140(a). Applicants for authorizations for space stations in the 17/24 GHz Broadcasting-Satellite Service must also include the information specified in § 25.140(b);

* * * * *

6. Amend § 25.115 by revising paragraphs (e)(1) and (g)(1)(vii) to read as follows:

§ 25.115 Applications for earth station authorizations.

* * * * *

(e) * * *

(1) An application for a GSO FSS earth station license in the 17.8-19.4 GHz, 19.6-20.2 GHz, 24.75-25.25 GHz, 27.5-29.1 GHz, or 29.25-30 GHz bands not filed on FCC Form 312EZ pursuant to paragraph (a)(2) of this section must be filed on FCC Form 312, Main Form and Schedule B, and must include any information required by paragraph (g) or (j) of this section or by §25.130.

* * * * *

(g) * * *

(1) * * *

(vii) The relevant off-axis EIRP density envelopes in §§ 25.138, 25.218, 25.221, 25.222, 25.226, or § 25.227 must be superimposed on plots submitted pursuant to paragraphs (g)(1)(i) through (vi) of this section.

* * * * *

7. Amend § 25.136 by revising the section heading and paragraphs (d) and (e) to read as follows:

§ 25.136 Earth Stations in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz and 47.2-48.2 GHz bands.

* * * * *

(d) Notwithstanding that FSS is co-primary with the Upper Microwave Flexible Use Service in the 24.75-25.25 GHz and 47.2-48.2 GHz bands, earth stations in those bands shall be limited to individually licensed earth stations. An applicant for a license for a transmitting earth station in the 24.75-25.25 GHz or 47.2-48.2 GHz band must meet one of the following criteria to be authorized to operate without providing any additional interference protection to stations in the Upper Microwave Flexible Use Service:

(1) The FSS licensee also holds the relevant Upper Microwave Flexible Use Service license(s) for the area in which the earth station generates a PFD, at 10 meters above ground level, of greater than or equal to $-77.6 \text{ dBm/m}^2/\text{MHz}$; or

(2) The earth station in the 47.2-48.2 GHz band was authorized prior to [effective date of second R&O] or the earth station in the 24.75-25.25 GHz band was authorized prior to [effective date of this rule]; or

(3) The application for the earth station in the 47.2-48.2 GHz band was filed prior to [effective date for second R&O] or the application for the earth station in the 24.75-25.25 GHz band was filed prior to [effective date of this rule]; or

(4) The applicant demonstrates compliance with all of the following criteria in its application:

(i) There are no more than two other authorized earth stations operating in the same band within the county where the proposed earth station is located that meet the criteria contained in either paragraphs (d)(1) (d)(2), (d)(3) or (d)(4) of this section, and there are no more than 14 other authorized earth stations operating in the same band within the PEA where the proposed earth station is located that meet the criteria contained in paragraphs (d)(1) (d)(2), (d)(3) or (d)(4) of this . For purposes of this requirement, multiple earth stations that are collocated with or at a location contiguous to each other shall be considered as one earth station;

(ii) The area in which the earth station generates a PFD, at 10 meters above ground level, of greater than or equal to $-77.6 \text{ dBm/m}^2/\text{MHz}$, together with the similar area of any other earth station authorized pursuant to paragraph (d) of this, does not cover, in the aggregate, more than the amount of population of the PEA within which the earth station is located as noted in Table 1 to this paragraph:

Table 1 to Paragraph (d)(4)(ii)

Population within Partial Economic Area (PEA) where earth station is located	Maximum permitted aggregate population within $-77.6 \text{ dBm/m}^2/\text{MHz}$ PFD contour of earth stations
Greater than 2,250,000	0.1 percent of population in PEA

Between 60,000 and 2,250,000	2,250 people
Fewer than 60,000	3.75 percent of population in PEA

(iii) The area in which the earth station generates a PFD) at 10 meters above ground level, of greater than or equal to $-77.6 \text{ dBm/m}^2/\text{MHz}$ does not contain any major event venue, any highway classified by the U.S. Department of Transportation under the categories Interstate, Other Freeways and Expressways, or Other Principal Arterial, or an urban mass transit route, passenger railroad, or cruise ship port; and;

(iv) The applicant has successfully completed frequency coordination with the UMFUS licensees within the area in which the earth station generates a power flux density (PFD), at 10 meters above ground level, of greater than or equal to $-77.6 \text{ dBm/m}^2/\text{MHz}$ with respect to existing facilities constructed and in operation by the UMFUS licensee. In coordinating with UMFUS licensees, the applicant shall use the applicable processes contained in § 101.103(d) of this chapter.

(e) If an earth station applicant or licensee in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz and/or 47.2-48.2 GHz bands enters into an agreement with an UMFUS licensee, their operations shall be governed by that agreement, except to the extent that the agreement is inconsistent with the Commission's rules or the Communications Act.

* * * * *

8. Amend § 25.138 by revising the section heading and paragraph (a) introductory text to read as follows:

§ 25.138 Licensing requirements for GSO FSS earth stations in the conventional Ka-band and the 24.75-25.25 GHz band.

(a) Applications for earth station licenses in the GSO FSS in the conventional Ka-band or the 24.75-25.25 GHz band that indicate that the following requirements will be met and include the information required by relevant provisions in §§ 25.115 and 25.130 may be routinely processed:

* * * * *

9. Amend § 25.140 by revising paragraphs (a)(2), (a)(3) introductory text, (a)(3)(iii) through (v), adding paragraph (a)(3)(vi), revising paragraph (b) introductory text, (b)(3) through (b)(5), removing paragraph (b)(6), removing and reserving paragraph (c), and revising paragraph (d) introductory text to read as follows:

§ 25.140 Further requirements for license applications for GSO space station operation in the FSS and the 17/24 GHz BSS.

(a) * * *

(2) In addition to the information required by § 25.114, an applicant for GSO FSS space station operation, including applicants proposing feeder links for space stations operating in the 17/24 GHz BSS, that will be located at an orbital location less than two degrees from the assigned location of an authorized co-frequency GSO space station, must either certify that the proposed operation has been coordinated with the operator of the co-frequency space station or submit an interference analysis demonstrating the compatibility of the proposed system with the co-frequency space station. Such an analysis must include, for each type of radio frequency carrier, the link noise budget, modulation parameters, and overall link performance analysis. (See Appendices B and C to Licensing of Space Stations in the Domestic Fixed-Satellite Service, FCC 83-184, and the following

public notices, copies of which are available in the Commission's EDOCS database: DA 03-3863 and DA 04-1708.) The provisions in this paragraph do not apply to proposed analog video operation, which is subject to the requirement in paragraph (a)(1) of this section.

(3) In addition to the information required by § 25.114, an applicant for a GSO FSS space station, including applicants proposing feeder links for space stations operating in the 17/24 GHz BSS, must provide the following for operation other than analog video operation:

* * * * *

(iii) With respect to proposed operation in the conventional Ka-band, a certification that the proposed space station will not generate power flux-density at the Earth's surface in excess of $-118 \text{ dBW/m}^2/\text{MHz}$ and that associated uplink operation will not exceed applicable EIRP density envelopes in § 25.138(a) unless the non-routine uplink and/or downlink operation is coordinated with operators of authorized co-frequency space stations at assigned locations within 6 degrees of the orbital location and except as provided in paragraph (d) of this section.

(iv) With respect to proposed operation in the 24.75-25.25 GHz band (Earth-to-space), a certification that the proposed space station will not generate a power flux density at the Earth's surface in excess of the applicable limits in this part and that the associated uplink operation will not exceed applicable EIRP density envelopes in § 25.138(a) unless the non-routine uplink and/or downlink operation is coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of the orbital location and except as provided in paragraph (d) of this section.

(v) With respect to proposed operation in the 4500-4800 MHz (space-to-Earth), 6725-7025 MHz (Earth-to-space), 10.70-10.95 GHz (space-to-Earth), 11.20-11.45 GHz (space-to-Earth), and/or 12.75-13.25 GHz (Earth-to-space) bands, a statement that the proposed operation will take into

account the applicable requirements of Appendix 30B of the ITU Radio Regulations (incorporated by reference, see § 25.108) and a demonstration that it is compatible with other U.S. ITU filings under Appendix 30B.

(vi) With respect to proposed operation in other FSS bands, an interference analysis demonstrating compatibility with any previously authorized co-frequency space station at a location two degrees away or a certification that the proposed operation has been coordinated with the operator(s) of the previously authorized space station(s). If there is no previously authorized space station at a location two degrees away, the applicant must submit an interference analysis demonstrating compatibility with a hypothetical co-frequency space station two degrees away with the same receiving and transmitting characteristics as the proposed space station.

(b) Each applicant for a license to operate a space station transmitting in the 17.3-17.8 GHz band must provide the following information, in addition to that required by § 25.114:

* * * * *

(3) An applicant for a license to operate a space station transmitting in the 17.3-17.8 GHz band must certify that the downlink power flux density on the Earth's surface will not exceed the values specified in §25.208(c) and/or (w), or must provide the certification specified in § 25.114(d)(15)(ii).

(4) An applicant for a license to operate a space station transmitting in the 17.3-17.8 GHz band to be located less than four degrees from a previously licensed or proposed space station transmitting in the 17.3-17.8 GHz band, must provide an interference analysis of the kind described in paragraph (a) of this, except that the applicant must demonstrate that its proposed network will not cause more interference to the adjacent space station transmitting in the 17.3-17.8 GHz band operating in

compliance with the technical requirements of this part, than if the applicant were located at an orbital separation of four degrees from the previously licensed or proposed space station.

(5) In addition to the requirements of paragraphs (b)(3) and (b)(4) of this section, the link budget for any satellite in the 17.3-17.8 GHz band (space-to-Earth) must take into account longitudinal stationkeeping tolerances. Any applicant for a space station transmitting in the 17.3-17.8 GHz band that has reached a coordination agreement with an operator of another space station to allow that operator to exceed the pfd levels specified in the rules for this service, must use those higher pfd levels for the purpose of this showing.

(c) [Reserved]

(d) An operator of a GSO FSS space station in the conventional or extended C-bands, conventional or extended Ku-bands, 24.75-25.25 GHz band (Earth-to-space), or conventional Ka-band may notify the Commission of its non-routine transmission levels and be relieved of the obligation to coordinate such levels with later applicants and petitioners.

* * * * *

§25.203 [Amended].

10. Amend § 25.203 by removing and reserving paragraph (l).

11. Amend § 25.204 by removing paragraph (e)(4) and revising paragraphs (e) introductory text, (e)(1) and (3) to read as follows:

§25.204 Power limits for earth stations.

* * * * *

(e) To the extent specified in paragraphs (e)(1) through (e)(3) of this section, earth stations in the Fixed-Satellite Service may employ uplink adaptive power control or other methods of fade compensation to facilitate transmission of uplinks at power levels required for desired link performance while minimizing interference between networks.

(1) Except when paragraphs (e)(2) through (e)(3) of this section apply, transmissions from FSS earth stations in frequencies above 10 GHz may exceed the uplink EIRP and EIRP density limits specified in the station authorization under conditions of uplink fading due to precipitation by an amount not to exceed 1 dB above the actual amount of monitored excess attenuation over clear sky propagation conditions. EIRP levels must be returned to normal as soon as the attenuating weather pattern subsides.

* * * * *

(3) FSS earth stations transmitting to geostationary space stations in the 24.75-25.25 GHz, 28.35-28.6 GHz, and/or 29.25-30.0 GHz bands may employ uplink adaptive power control or other methods of fade compensation. For stations employing uplink power control, the values in paragraphs (a)(1), (a)(2), and (a)(4) of §25.138 of this part may be exceeded by up to 20 dB under conditions of uplink fading due to precipitation. The amount of such increase in excess of the actual amount of monitored excess attenuation over clear sky propagation conditions must not exceed 1.5 dB or 15 percent of the actual amount of monitored excess attenuation in dB, whichever is larger, with a confidence level of 90 percent except over transient periods accounting for no more than 0.5 percent of the time during which the excess is no more than 4.0 dB.

* * * * *

12. Amend § 25.209 by revising paragraph (f) to read as follows:

§ 25.209 Earth station antenna performance standards.

* * * * *

(f) A GSO FSS earth station with an antenna that does not conform to the applicable standards in paragraphs (a) and (b) of this section will be authorized only if the applicant demonstrates that the antenna will not cause unacceptable interference. This demonstration must comply with the requirements in §§ 25.138, 25.218, 25.220, 25.221, 25.222, 25.226, or § 25.227, as appropriate.

* * * * *

13. Amend § 25.210 by revising paragraph (i) to read as follows:

* * * * *

(i) 17/24 GHz BSS space station antennas transmitting in the 17.3-17.8 GHz band must be designed to provide a cross-polarization isolation such that the ratio of the on axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band is at least 25 dB within its primary coverage area.

* * * * *

14. Amend § 25.220 by revising paragraph (a) to read as follows:

§25.220 Non-routine transmit/receive earth station operations.

(a) The requirements in this apply to applications for, and operation of, earth stations transmitting in the conventional or extended C-bands, the conventional or extended Ku-bands, the 24.75-25.25 GHz band, or the conventional Ka-band that do not qualify for routine licensing under relevant criteria in §§ 25.138, 25.211, 25.212, 25.218, 25.221(a)(1) or (a)(3), § 25.222(a)(1) or (a)(3), § 25.226(a)(1) or (a)(3), or § 25.227(a)(1) or (a)(3).

* * * * *

§ 25.223 [Removed and Reserved].

15. Remove and reserve § 25.223.

16. Revise § 25.262 to read as follows:

§ 25.262 Licensing and domestic coordination requirements for 17/24 GHz BSS space stations.

(a) An applicant may be authorized to operate a space station transmitting in the 17.3-17.8 GHz band at the maximum power flux density limits defined in § 25.208(c) and/or § 25.208(w) of this part, without coordinating its power flux density levels with adjacent licensed or permitted operators, only if there is no licensed space station, or prior-filed application for a space station transmitting in the 17.3-17.8 GHz band at a location less than four degrees from the orbital location at which the applicant proposes to operate.

(b) Any U.S. licensee or permittee authorized to transmit in the 17.3-17.8 GHz band that does not comply with the power flux-density limits set forth in § 25.208(c) and/or § 25.208(w) of this part shall bear the burden of coordinating with any future co-frequency licensees and permittees of a space station transmitting in the 17.3-17.8 GHz band under the following circumstances:

(1) If the operator's space-to-Earth power flux-density levels exceed the power flux-density limits set forth in § 25.208(c) and/or § 25.208(w) of this part by 3 dB or less, the operator shall bear the burden of coordinating with any future operators proposing a space station transmitting in the 17.3-17.8 GHz band in compliance with power flux-density limits set forth in § 25.208(c) and/or § 25.208(w) of this part and located within ± 6 degrees of the operator's 17/24 GHz BSS space station.

(2) If the operator's space-to-Earth power flux-density levels exceed the power flux-density limits set forth in § 25.208(c) and/or § 25.208(w) of this part by more than 3 dB, the operator shall bear the

burden of coordinating with any future operators proposing a space station transmitting in the 17.3-17.8 GHz band in compliance with power flux-density limits set forth in § 25.208(c) and/or § 25.208(w) of this part and located within ± 10 degrees of the operator's space station.

(3) If no good faith agreement can be reached, the operator of the space station transmitting in the 17.3-17.8 GHz band that does not comply with § 25.208(c) and/or § 25.208(w) of this part shall reduce its space-to-Earth power flux-density levels to be compliant with those specified in § 25.208(c) and/or § 25.208(w) of this part.

(c) Any U.S. licensee or permittee using a space station transmitting in the 17.3-17.8 GHz band that is required to provide information in its application pursuant to § 25.140(b)(4) of this part must accept any increased interference that may result from adjacent space stations transmitting in the 17.3-17.8 GHz band that are operating in compliance with the rules for such space stations.

(d)(1) Notwithstanding the provisions of this, licensees and permittees will be allowed to apply for a license or authorization for a replacement satellite that will be operated at the same power level and interference protection as the satellite to be replaced.

(2) In addition, applicants for licenses or authority for a satellite to be operated at an orbit location that was made available after a previous license for a space station transmitting in the 17.3-17.8 GHz band was cancelled or surrendered will be permitted to apply for authority to operate a satellite at the same power level and interference protection as the previous licensee at that orbit location, to the extent that their proposed operations are consistent with the provisions of this part. Such applications will be considered pursuant to the first-come, first-served procedures set forth in § 25.158 of this part.

PART 30 – UPPER MICROWAVE FLEXIBLE USE SERVICE

17. The authority citation for part 30 continues to read as follows:

AUTHORITY: 47 U.S.C. 151, 152, 153, 154, 301, 303, 304, 307, 309, 310, 316, 332, 1302.

18. Amend § 30.104 by redesignating paragraphs (b) through (e) as paragraphs (c) through (f), adding new paragraph (b), and revising newly redesignated paragraphs (c), (e), and (f) to read as follows:

§ 30.104 Performance Requirements

* * * * *

(b) In the alternative, a licensee may make its buildout showing on the basis of geographic area coverage. To satisfy the requirements of this using this metric, licensees relying on mobile or point-to-multipoint service must show that they are providing reliable signal coverage and service to at least 25% of the geographic area of the license. The geographic area of the license shall be determined by the total land area of the county or counties covered by the license. Licensees relying on fixed point-to-point links or other, low-power point-to-point connections must show that they have deployed at least one transmitter or receiver in at least 25% of the census tracts within the license area. All equipment relied upon in the showing, whatever type of service or connection it provides, must be operational and providing service, either to customers or for internal use, as of the date of the filing.

(c) Showings that rely on a combination of multiple types of service will be evaluated on a case-by-case basis. Licensees may not combine population-based showings with geographic area-based showings.

* * * * *

(e) Failure to meet this requirement will result in automatic cancellation of the license. In bands licensed on a Partial Economic Area basis, licensees will have the option of partitioning a license on a county basis in order to reduce the population or land area within the license area to a level where the licensee's buildout would meet one of the applicable performance metrics.

(f) Existing 24 GHz, 28 GHz and 39 GHz licensees shall be required to make a showing pursuant to this rule by June 1, 2024.

19. Revise § 30.208 to read as follows:

§ 30.208 Operability

Mobile and transportable stations that operate on any portion of frequencies within the 27.5-28.35 GHz or the 37-40 GHz bands must be capable of operating on all frequencies within those particular bands.

Mobile and transportable stations that operate on any portion of either the 24.25-24.45 GHz or 24.75-25.25 GHz bands must be capable of operating on all frequencies within both of these bands.

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